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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/620,474	07/16/2003	Darwin Rambo	15019US01	8619
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EXAMINER				
HAN, QI				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/620,474

Applicant(s)

RAMBO ET AL.

Examiner

QI HAN

Art Unit

2626

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 July 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11-13, 15-17 and 19-54 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11-13, 15-17 and 19-54 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB-06)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Response to Amendment

2. This communication is responsive to the applicant's amendment dated 07/24/2009. The applicant(s) amended claims 11-12, 15, 19-38, 41-42 and 44-48 (see the amendment: pages 3-8).

The examiner withdrew the previous claim rejection under 35 USC 101, because the applicant amended the corresponded claim(s).

Response to Arguments

3. Applicant's arguments filed on 07/24/2009 with respect to the claim rejection under 35 USC 102 and/or 103, have been fully considered but are moot in view of the new ground(s) of rejection, since the amended claims introduce new issue, which changes the scope of the claims.

It is noted that the response to the applicant's arguments based on the newly amended claims (see Remarks: pages 13-25) is directed to the claim rejection with necessitated new ground(s) (see below).

It is also noted that the previous cited references are still applicable to the prior art rejection (with newly combined teachings and/or interpretations) for the amended claims having new ground (see detail rejection below).

Further, it should be pointed out that the amended limitations of claims 11-13, 15-17 and 49-54 are still be rejected under the previous prior art rejection (i.e. 35 USC 102/103), because the applicant's amendments and arguments for these claims (see amendment: pages 3 and 18-19) cannot overcome the previous prior art rejection (see the corresponding claim rejection filed on 03/24/2009).

Claim Rejections - 35 USC § 102

4. Claims 11-12, 17, 19-20, 23, 27-31, 34, 36-37, 40-42, 47-49 and 52 are rejected under 35 U.S.C. 102(c) as being anticipated by GOODMAN (US 7173910 B2).

As per **claim 19**, GOODMAN discloses 'service level agreements based on objective voice quality testing for voice over IP (VOIP) networks' (title) for 'a network-wise monitoring system' (col. 7, lines 3-5), comprising:

"a first voice analysis platform for transmitting a reference speech through a communication system"; (Figs. 1-2 and col. 3, lines 5-67, 'voice quality test probes 14a and 14b (interpreted as voice analysis platform)', 'store software algorithm implementing a perceptual or voice call listening quality test model', 'analyzes the voice quality of the recorded voice file', and 'transmit ...the reference voice files (reference speech) over the speech path within the VOIP network (communication system)', 'one test probe acts as a resource to transmit the file (reference speech)'; also see Figs. 5-6); and

"a second voice analysis platform for receiving said reference speech transmitted through said communication system" (similarly, Figs. 1-2 and col. 3, lines 5-57, 'voice quality test probes 14a and 14b', 'store software algorithm implementing a perceptual or voice call **listening**

(receiving) quality test model' and 'receive the reference voice files (reference speech) over the speech path within the VOIP network (communication system)', 'a second test probe acts as a resource to receive the file transmitted'; also see Figs. 5-6),

"said communication system comprising a plurality of signal processing elements used to process said reference speech", (Figs. 1-2 and col. 3, lines 12-27, 'gateway', 'IP communication devices' (signal processing elements), col. 4, lines 12 to col. 5, line 56, 'each level of service', 'gateways implement one or more coding schemes', 'protocols' and 'codecs' (signal processing elements) used by 'the VOIP communications device' including 'gateway' (can be interpreted as signal processing element or communication system)', wherein the mechanisms of implementing/processing these coding schemes, service levels, protocols, and/or codecs can also read on the claimed signal processing elements),

"wherein a network interface (such as 'telephone interfaces', or 'IP interface') is used to communicatively couple ('connect') the outputs of said plurality of signal processing elements to said first voice analysis platform or said second voice analysis platform (such as 'test probes': TP, TP1 TP2, TP3)" (Fig.2 and col. 6, lines 1-32; also see Fig.5 and col. 9, lines 22-44),

"wherein a reference speech sample ('reference voice file' that is played back) obtained at an output of a signal processing element (one of 'text probes' acting as 'a resource to transmit the file') of said plurality of signal processing elements is transmitted through said network interface (such as 'telephone interfaces', or 'IP interface') to said first voice analysis platform or said second voice analysis platform (one of 'text probes'

acting as 'a resource to receive the file')", (Fig.2 and col. 3, line 28 to col. 4, lines 18 and col. 6, lines 1-32; also see Fig.5 and col. 9, lines 22-44; col. 6, lines 10-63, 'end-to-end scores', 'border-to-end (or border) scores', 'the voice quality measurements ...can be end-to-edge or edge-to-edge', which implies obtaining the reference speech at a measured point/place that reflects an output of the corresponding signal processing element),

"said reference speech sample obtained at said output used to compute a voice quality score at said first voice analysis platform or said second voice analysis platform" (Figs. 1-3 and col. 4, lines 3-17, 'when the analysis is complete, the test probe translates the difference into a PAMS score', 'the voice listening quality test is performed for each level of service as determined (selecting output from a signal processing element) by the type of codec (i.e., coder/decoder) that is used by the VOIP communication device that is performing the voice encoding and decoding operations'; col. 7, lines 12-22, 'all test probes in the network are configured and controlled by the manager' that 'stores the consolidated information in a database for analysis'; col. 7, lines 30-60, 'supports a large number of VOIP Points (outputs) of Presence (VOIP POPs)'; col. 3, lines 28-29, 'the test probes also store a software algorithm implementing a perceptual or voice call listening quality test model', including 'Perceptual Analysis Measurement System (PAMS)' and 'Perceptual Speech Quality Measurement (PSQM)' that provide objective voice quality scores; it is noted that either the test probe or combination of the test probes and the manager can be read on the voice analysis platform).

As per **claim 20** (depending on claim 19), as stated above, GOODMAN discloses "said signal processing element comprises a codec" (see rejection for claim 1 above).

As per **claim 23** (depending on claim 19), GOODMAN further discloses “said signal processing element **comprises a packetizer**” (col. 1, lines 8-26, ‘packet-based network’ ‘voice over IP (VOIP) network’, Figs.1-2, wherein ‘VOIP gateway’ necessarily or inherently comprises a packetizer, since its output directly connected VOIP network, i.e. packet-based network).

As per **claims 27-28** (depending on claim 19), as stated above, GOODMAN discloses the corresponding voice quality score comprising “PAMS” (for claim 27) and/or “PSQM” (for claim 28) (col. 3, lines 28-29, see rejection for claim 1 above).

As per **claim 29** (depending on claim 19), GOODMAN further discloses:

“said first voice analysis platform comprises a software module, said software module comprising software that provides configuration data to a gateway”, (col. 3, lines 32-36, col. 4, lines 12 to col. 5, line 56, ‘test probes store a software algorithm (software module) implementing a perceptual or voice all listening quality test model’ that ‘is performed for each level of service’ based on ‘both codec (signal processing element) and IP signaling protocol (configuration data)’ corresponding to one of the assigned unique telephone numbers (also read on configuration data in broad sense) that is called (provided) to a gateway, ‘gateway is configured with resources to perform both types of coding and signal, but selects the appropriated coding for the call to test probe...”, wherein any one or more of ‘level of service’, ‘one or more coding schemes’, ‘protocols’ and ‘codecs’ corresponding the communications device’ and ‘gateway’ can be read on configuration data; also see Figs. 1 and 4),

“said gateway comprising one or more signal processing elements” (col. 4, lines 1218, ‘codec (i.e. coder/decoder) (interpreted as one or more signal processing elements)’ used by ‘VOIP communication device’ such as ‘gateways’ that implement one or more coding schemes

(also read on signal processing elements) to support voice encoding/decoding'; Fig.4, wherein the data (telephone#, service level (or protocol) and routing info.) in the gateway configuration table can also be read on configuration data or signal processing elements),

"said configuration data used in selecting output from said outputs for computing said voice quality score at said first voice analysis platform **or** said second voice analysis platform" (col. 5, lines 17-25, 'gateway is configured with resources to perform both types of coding and signaling (configuration data)', 'the gateway 16a determines from the service level information associated with the called phone number (selected outputs)'; also see above, col. 4, lines 12 to col. 5, line 56).

As per **claim 11**, it recites a method. The rejection is based on the same reason described for claim 19, because it also reads on the limitations of claim 11.

As per **claim 12** (depending on claim 11), GOODMAN further discloses "displaying said voice quality scores graphically using said voice analysis platform" (col. 4, lines 10-11).

As per **claim 17** (depending on claim 11), GOODMAN further discloses "a voice over IP gateway" (col. 3, line 60).

As per **claim 30**, the rejection is based on the same reason described for claim 19, because it also reads on the limitations of claim 30.

As per **claims 31, 34, 36-37 and 40** (depending on claim 30), the rejection is based on the same reason described for claims 20, 23 and 27-29 respectively, because they recite the same or similar limitations as claims 20, 23 and 27-29 respectively.

As per **claim 41**, it recites a method. The rejection is based on the same reason described for claim 19, because the claim recites the same or similar limitation(s) as claim 19.

As per **claim 42** (depending on claim 41), the rejection is based on the same reason described for claim 12, because the claim recites the same or similar limitations as claim 12.

As per **claims 47-48** (depending on claim 41), the rejection is based on the same reason described for claims 27-28 respectively, because they recite the same or similar limitations as claims 27-28 respectively.

As per **claims 49 and 52** (depending on claim 11), the rejection is based on the same reason described for claims 20 and 23 respectively, because they recite the same or similar limitations as claims 20 and 23 respectively.

Claim Rejections - 35 USC § 103

5. Claims 21, 25, 32, 39, 50 and 54 are rejected under 35 U.S.C. 103(a) as being unpatentable over GOODMAN in view of HOUH et al. (US 2002/0016937 A1).

As per **claims 21 and 25** (depending on claim 19), GOODMAN does not expressly disclose the signal processing element(s) comprising “a voice activity detector (VAD)” (for claim 21) and “a comfort noise generator (CNG)” (for claim 25). However, the feature is well known in the art as evidenced by HOUH who discloses ‘method and apparatus for unitizing a network processor as part of a test system’ (title), comprising that ‘a gateway is equipped with standard interfaces’ and ‘the necessary encoding/decoding, ...voice activity detection (read on voice activity detector) comfort noise generation (read on comfort noise generator) and packetizing/depacketizing are performed by the gateway’ (p(paragraph)39), and using ‘Perceptual Speech Quality Measurement (PSQM)’ (p55). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify

GOODMAN by providing signal processing element(s) comprising VAD and/or CNG with suitable testing measurement such as PSQM, as taught by HOUH, for the purpose (motivation) of providing a variety of functions for testing a network environment and devices (HOUH: p11).

As per **claims 32 and 39** (depending on claim 30), the rejection is based on the same reason described for claims 21 and 25 respectively, because they recite the same or similar limitations as claims 21 and 25 respectively.

As per **claims 50 and 54** (depending on claim 11), the rejection is based on the same reason described for claims 21 and 25 respectively, because they recite the same or similar limitations as claims 21 and 25 respectively.

6. Claims 22, 33 and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over GOODMAN in view of CONNOR et al. (US 6,999,560 B1) hereinafter referenced as CONNOR.

As per **claim 22**(depending on claim 19), GOODMAN does not expressly disclose the signal processing element(s) comprising “an echo canceller”. However, the feature is well known in the art as evidenced by CONNOR who discloses ‘method and apparatus for testing echo canceller performance’ (title), comprising that ‘the echo canceller 38 runs on the packet voice gateway 26 (signal processing elements)’ (col. 1, lines 37-41) and providing ‘perceptual speech quality measure (PSQM) (col. 7, lines 12-16). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify GOODMAN by providing an echo canceller on a signal processing element (such as a gateway) with appropriate testing measure (such as PSQM), as taught by CONNOR, for the purpose (motivation) of

removing echo and/or more effectively testing echo canceller performance (CONNOR: col. 1, lines 35-36 and col. 2, lines 43-44).

As per **claim 33** (depending on claim 30), the rejection is based on the same reason described for claim 22, because the claim recites the same or similar limitation(s) as claim 22.

As per **claim 51** (depending on claim 11), the rejection is based on the same reason described for claim 22, because the claim recites the same or similar limitation(s) as claim 22.

7. Claims 24, 26, 35, 38, 46 and 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over GOODMAN in view of EL-HENNAWEY et al. (US 2004/0071084 A1) hereinafter referenced as EL-HENNAWEY.

As per **claim 24** (depending on claim 19), GOODMAN does not expressly disclose the signal processing element(s) comprising "a jitter buffer". However, the feature is well known in the art as evidenced by EL-HENNAWEY who discloses 'non-intrusive monitoring of quality levels for voice communications over a packet-based network' (title), comprising using 'a jitter buffer' in 'a receiving system' (p57). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify GOODMAN by providing a jitter buffer in a receiving system (signal processing element), as taught by EL-HENNAWEY, for the purpose (motivation) of allowing the receiving system to wait until packets in a desired sequence and/or monitoring for real time voice quality levels in live calls (EL-HENNAWEY: p57 and p5).

As per **claim 26** (depending on claim 19), GOODMAN does not expressly disclose the corresponding voice quality score(s) comprising "PESQ". However, the feature is well known in the art as evidenced by EL-HENNAWEY who further discloses using standards 'for objectively

assessing the quality of speech' including 'PAMS', 'PSQM' and 'PESQ' (p35; also p51).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify GOODMAN by providing various standard speech quality measurements including PESQ, as taught by EL-HENNAWEY, for the purpose (motivation) of monitoring for real time voice quality levels in live calls and/or evaluating voice quality on an active call in a non-intrusive manner (EL-HENNAWEY: p5 and p8).

As per **claim 35** (depending on claim 30), the rejection is based on the same reason described for claim 26, because the claim recites the same or similar limitations as claim 26.

As per **claim 38** (depending on claim 30), the rejection is based on the same reason described for claim 24, because the claim recites the same or similar limitation(s) as claim 24.

As per **claim 46** (depending on claim 41), the rejection is based on the same reason described for claim 26, because the claim recites the same or similar limitations as claim 26.

As per **claim 53** (depending on claim 11), the rejection is based on the same reason described for claim 24, because the claim recites the same or similar limitation(s) as claim 24.

8. Claims 13, 15-16 and 43-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over GOODMAN in view of BAUER et al. (US 2005/026189 A1) hereinafter referenced as BAUER.

As per **claim 13** (depending on claim 12), GOODMAN does not expressly disclose "displaying occurs by way of a graphical user interface". However, the feature is well known in the art as evidenced by BAUER who discloses 'methods and devices for correlating audio sample comparisons and network performance statistics' (title), comprising 'methods and

devices evaluating audio (e.g. voice) quality in a network' and displaying the 'results' and 'statistics' 'in a user-friendly graphical user interface (GUI)' (paragraph (hereinafter referenced as p) 6), and 'the information selected for display includes the PSQM score' (p44 and Fig.4). BAUER also teaches that the functionality provided by separate elements 'can be combined and/or integrated with the functionality of one or more of the other elements' and 'what is significant is the functionality provided by system (communication system)' (p15). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify GOODMAN by providing GUI for displaying various information including voice quality scores and the related statistics, as taught by BAUER, for the purpose (motivation) of permit the user to more readily identify any degradation in quality and its cause (BAUER: p7).

As per **claim 15** (depending on claim 11), the rejection is based on the same reason described for claim 13, because the rejection for claim 13 covers the same or similar limitation(s) of claim 15.

As per **claim 16** (depending on claim 15), GOODMAN in view of BAUER further discloses "said statistical information comprises an average voice quality score and a variance" (BAUER: Fig. 4 shows the statistical information including 'average PSQM' and 'PSQM Std. Deviation (corresponding to equivalent measurement of variance)').

As per **claims 43-45** (depending on claim 41), the rejection is based on the same reason described for claims 13 and 15-16 respectively, because they recite the same or similar limitations as claims 13 and 15-16 respectively.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a). A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to QI HAN whose telephone number is (571)272-7604. The examiner can normally be reached on M-TH:9:00-19:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil can be reached on (571)-272-7602. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

QH/qh
November 16, 2009
/QI HAN/
Primary Examiner, Art Unit 2626